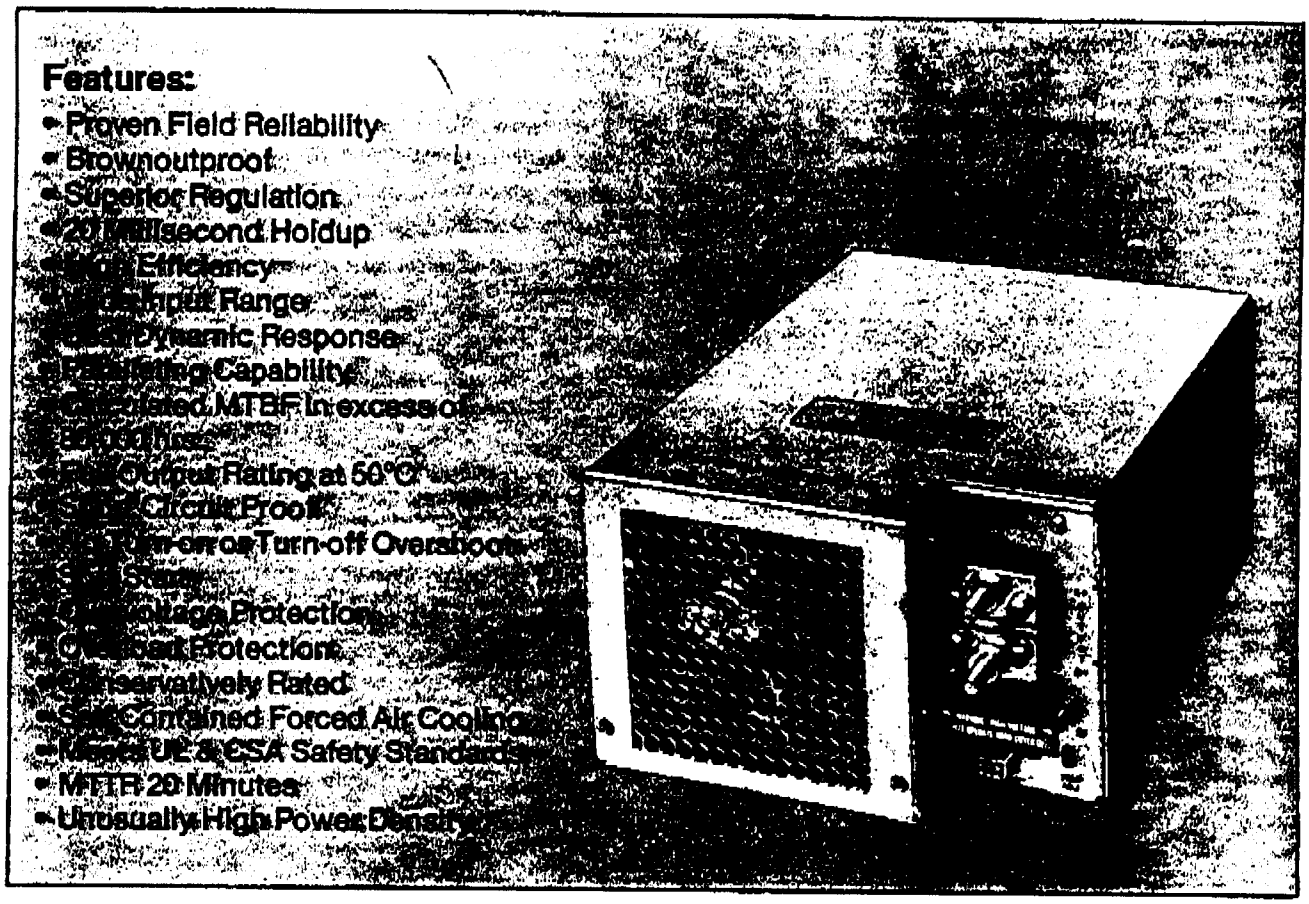
Model PM2500A

Single Output Switching Power Supply 1000 Watts


Features:
• Proven Field Reliability
• Brownoutproof
• Superior Regulation
• 20 Millisecond Holdup
• High Efficiency
• Wide Input Range
• Fast Dynamic Response
• Paralleling Capability
• Calculated MTBF in excess of
• Full Output Rating at 50°C
• Short Circuit Proof
• Turn-on or Turn-off Overshoot
• Soft Start
• Overvoltage Protection
• Overheat Protection
• Conservatively Rated
• Self Contained Forced Air Cooling
• Meets UL & CSA Safety Standards
• MTTR 20 Minutes
• Unusually High Power Density

General Description

The Model PM2500A AC-input high current single-output switching power supply provides up to 1000 watts of power with highly regulated output voltages ranging from 5 VDC to 60 VDC.

Over 100,000 PMI switchers are in the field providing dependable, service-free operation. Conservatively rated and highly efficient, the units run cool.

Pioneer Magnetics AC-input power supplies provide reliable, uninterrupted service during severe brown-out conditions, a feature not found in conventional designs.

Unique to PMI switching power supplies, is an inherently stable regulator design that ensures excellent dynamic response and precise regulation.

Pioneer Magnetics

The Switching Power Supply People since 1958

Specifications

Input: 100 to 138 VRMS or 184 to 250 VRMS single phase, 47 to 63 Hz. The 115 V and 220 V units will regulate through line dips to 80 VRMS and 160 VRMS, respectively.

Output:*

DC Voltage (volts)	Current (amperes)
5	200
6	150
12	85
15	70
24	40
28	36
48	20
60	16

*Other output volt/amp combinations available.

Output Voltage Adjustment Range: ±10% of nominal output voltage.

Worst Case Error Band: ±2% or ±100 mV (whichever is greater) including the combined effects of the following:

- Input voltage over the specified range
- Static loads from 0 to 100%
- Dynamic load steps 25% of full load with 10 μsec rise time
- Ripple and switching spikes
- Temperature stability over the full range 0°C to 50°C
- Drift for an 8-hour period following initial warmup

Overshoot: No turn-on or turn-off overshoot.

Overvoltage Protection: Overvoltage shutdown is normally set at 125% (±10%) of rated output. Overvoltage crowbar is available as an option.

Overload Protection: Current limiting circuitry will initiate foldback between 100 and 120% of full load current. Short circuit will be less than 65% of full load current. The output recovers automatically from overcurrent shutdown after load fault is removed.

Overtemperature Protection: Automatically shuts down unit in the event of overtemperature condition.

Reverse Voltage Protection: Supply is protected against reverse voltage applied across the output terminals.

Remote Sense: Provides correct voltage at the load with up to one volt drop in output lines.

AC Input Fuse: Standard on all single-phase units.

Temperature, Operating: 0° to 50°C at 100% of rated power, derates linearly to 80% rated power from 50°C to 71°C.

Temperature, Storage: -55°C to + 85°C.

Humidity: 5% to 95% without condensation.

Power Loss Holdup: Output will remain within regulation 20 milliseconds after loss of AC-input when operating at full load and nominal line.

Paralleling: Supply can be directly paralleled to other units without additional circuitry.

Safety Standards: Standard models meet UL478 and CSA requirements.

EMI, Conducted: Equipped with standard LC filter to suppress EMI; meets VDE 0871B with external filter.

EMI, Radiated: Meets VDE 0871B.

Size: 5" x 8" x 11" (12.7cm x 20.3cm x 27.9cm)

Weight: 20 lbs. (9.04 kg)

Options: Listed below are common options. Others are available on request.

- -1 Power Fail Signal
- -2 Logic Inhibit and Enable
- -3 Crowbar
- -5 Remote Programming
- -8T Output Power Good Signal

Pioneer Magnetics offers a wide variety of options to suit your exact requirement. Contact factory regarding additional features desired. Mechanical packaging considerations may limit the number of options that can be combined.

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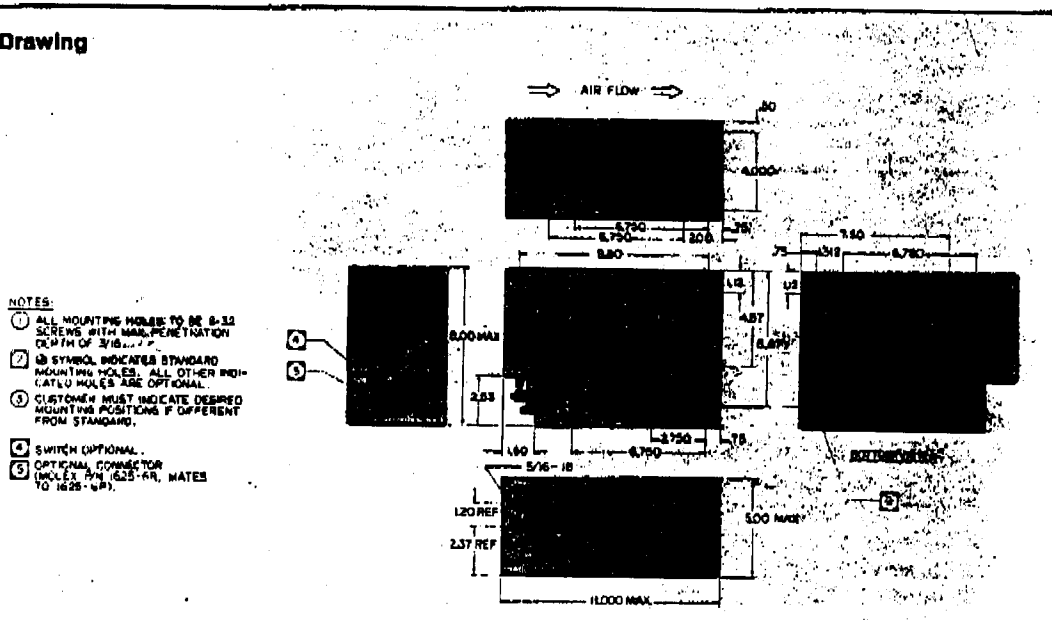
Outline Drawing


AIR FLOW
8.00 MAX
5/16-18
1.20 REF
2.37 REF
5.00 MAX
11.000 MAX
NOTES:
1. ALL MOUNTING HOLES TO BE 8-32 SCREWS WITH MAX. PENETRATION DEPTH OF 3/16...
2. ⊕ SYMBOL INDICATES STANDARD MOUNTING HOLES. ALL OTHER INDICATED HOLES ARE OPTIONAL.
3. CUSTOMER MUST INDICATE DESIRED MOUNTING POSITIONS IF DIFFERENT FROM STANDARD.
4. SWITCH OPTIONAL.
5. OPTIONAL CONNECTOR (MOLEX P/N 1625-6R, MATES TO 1625-6P).

PFC High Power Single Output

DESCRIPTION

The Single Output PFC series is our New Modular compact converter product line providing up to 3000 watts of continuous reliable power at full load. These Single Output PFCs are nearly 40% smaller than the earlier industry standard, with a power density up to 6 watts/in^3. The single output units will operate unattended and meet international safety and emissions standards.

FEATURES

- Power Factor (> 0.99) Corrected
- 0°C to +50°C at full load
- Dimensions (See Tables on back side)
- Output Fully Floating
- Overcurrent Protection
- Overvoltage Protection
- Remote Sense
- Overtemperature Protection
- Self-contained Forced Air Cooling
- Meets UL, CSA and VDE Safety
- Meets EMI EN55022 Level A
- BABT and ISO9001 (1997)

TYPICAL OPTIONS

- (-1) Power Fail Signal
- (-2) Logic Inhibit
- (-5) Margining/Programming
- (-6B) Single Wire Current Sharing
- (-8T) Power Good Signal
- (-20) Diode Isolation
- (-33) Output Current Monitor
- (-P) Hot Pluggable[2]
- (-R) Reverse Airflow[2]
- (-XX) Other Options Available[3]

ELECTRICAL SPECIFICATIONS

INPUTS

RANGE: Full Input Range 85 to 264VAC. See Output Tables I & II for Wide Input and High Input Range Models.
FREQUENCY: 43 to 63 Hz.
POWER FACTOR: > 0.99 @ full load.
INRUSH CURRENT: < 25A peak for the first four AC cycles (Bandwidth 10Hz to 10Khz).
HARMONIC CURRENT: < 5%.
HOLD UP TIME: At least 20msec from loss of input to loss of regulation.

NOTE:
PMI is the owner of US Patent # 4,677,366 for Power Factor Correction and is the *Worldwide Leader* in High Power PFC shipments.

OUTPUTS

VOLTAGE: 2, 3.3, 5, 12, 15, 24 and 48VDC.
CURRENT: See Tables on back side.
ADJUSTMENT RANGE: ±10% of nominal output voltage.
POLARITY: Output is isolated and regulated. It may be referenced + or - as required.
REMOTE SENSING: Compensates for up to 0.5V total loop drop in the output line.
STATIC REGULATION: Line:±0.25% over full line range. Load: ±0.25%, min to full load.
VOLTAGE STABILITY: ±0.1% for 24 hour period after 30 minute warm up.
TEMP COEFFICIENT: ±0.02%/°C from 0°C to +50°C
DYNAMIC REGULATION: Output Transient Response:4% deviation (200mV@ < 500usec for a 25% load step,1A/usec slew rate.

OUTPUTS

P-P RIPPLE AND NOISE: Differential: 1% (20Hz to 50MHz Bandwidth).
OVERSHOOT: No turn-on or off overshoot.
TURN ON DELAY: 1 sec. max from application of AC line.
OVER VOLTAGE PROTECTION: 125% ±5% of nominal. OVP shutdown is latched until the input line is removed for 5 secs and then reapplied. OVP sensing is done at the output terminals.
OVERCURRENT PROTECTION: Current Limit Point: 110% to 120% of full load.
SHORT CIRCUIT CURRENT: Foldback type 40% to 80% of full rated current. Unit will recover when overload is removed.
REVERSE VOLTAGE PROTECTION: Protected to rated load with the fan running recover when overload is removed.

ENVIRONMENTAL

OVERTEMPERATURE PROTECTION: Automatically shuts down and latches the unit in the event of an over temperature condition. After cool down power must be recycled to restart the unit.
AUDIBLE NOISE: 63 dBA max at 1meter. 70 dBA for high speed fans. (See Output Tables for units with high speed fan).
TEMPERATURE: Standard: 0°C to +50°C at full load. Storage: -55°C to +85°C.
HUMIDITY: 20% to 95% non-condensing.

ALTITUDE: *Operating:* 8,000 Ft. Derates to 90% at 10,000 Ft. *Non-Operating* at 30,000 feet.
VIBRATION: *Operating*: From 5 to 27Hz, 0.02" double amplitude; from 27 to 500 Hz, 0.75G, 3 Axes, 5 min/octave sweep, dwell 1 min at resonance. *Non-Operating:* From 5 to 17Hz, 0.01" double amplitude; from 17 to 500Hz, 1.5G peak; 3 axes, 5 min/octave sweep, dwell 1 min at resonance.

MTBF: 500,000 hours
SHOCK: *Operating*: 5G, half sine, 11msec 3 axes. *Non-Operating:* 15G half sine, 11 msec, 3 axes.
COOLING: Forced air, internal fan Airflow normally exits at connector.
EMI: *Conducted & Radiated:* EN55022 level A
SAFETY: Meets UL1950, CSA1950, and TUV to EN60950. Factory is an approved BABT manufacturer.

[1] Standard Package [2] Consult Factory [3] Consult Factory for Option list

PIONEER MAGNETICS *PowerFactors*™

SINGLE OUTPUT PRODUCT TABLE

OPTIONS

(-1C) POWER FAIL: TTL signal goes low at least 5 msec before loss of regulation.

(-2T) LOGIC INHIBIT: System can be turned on or off with TTL or CMOS compatible signal or switch contact.

(-5L) MARGINING/PROGRAMMING: Allows ±5% change of output voltage.

(-6B) CURRENT SHARING: Allows the Main channels of two or more similiar supplies load share using a single wire.

(-8T) POWER GOOD: Monitors the output voltage at the sense connections and sinks to logic return when the output is out of a ±4% tolerance band.

(-20C) INTERNAL DIODE ISOLATION

(-33) OUTPUT CURRENT MONITOR

MECHANICAL

DIMENSIONS: See Output Tables. Exclusive of the I/O connector.

WEIGHT: Ranges from 11 to 15 lbs.

MOUNTING: Mounting holes for 8-32 screws are included on the bottom and on the left side.

I/O CONNECTORS: Output: Flat bus bar/0.34" hole. AC Input: Barrier strip with 8-32 screws.

AUXILIARY DB25 PIN CONNECTOR: For remote sense, power fail, power good, margining, current sharing and inhibit.

TABLE I: PFC SINGLE OUTPUT WIDE INPUT (85 TO 264VAC) SERIES

MODEL[1]	PM3342B-6	PM3344B-6	PM3345B-6	PM3346B-6	PM3348B-6
POWER	500W	750W	875W	1000W	1500W[2]
OUTPUTS	DC CURRENTS				
2V	150A	150A	175A	200A	300A
3.3V	150A	150A	175A	200A	300A
5V	100A	150A	175A	200A	300A
12V	42A	60A	72A	85A	125A
24V	20A	32A	36A	42A	63A
28V	17A	28A	31A	35A	54A
48V	10A	15A	18A	20A	31A
Dimensions[4]	5" x 5" x 11.25"				

TABLE II: PFC SINGLE OUTPUT HIGH POWER (170 TO 264VAC) SERIES

MODEL[1]	PM3346B-5	PM3347B-5	PM3348B-5	PM3349D-5	PM33411F-5
POWER	1000W	1200W	1500W	2000W	3000W[2]
OUTPUTS	DC CURRENTS				
2V	200A	240A	300A	400A	600A
3.3V	200A	240A	300A	400A	600A
5V	200A	240A	300A	400A	600A
12V	85A	100A	125A	167A	250A
24V	42A	50A	63A	84A	125A
28V	35A	43A	54A	72A	107A
48V	20A	25A	31A	43A	63A
Dimensions[4]	5" x 5" x 11.25"			5" x 6.5" x 12.8"	5" x 8" x 12.8"

[1] All Models are available in Hot Plug. Consult Factory for DC Currents above 150A

[2] Derates below 200VAC Input. [3] Requires High Speed Fan. [4] Consult Factory for Outline Drawing

Cat PM3340B-6 2 97

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